Ancient Life
Distance Learning Teacher Lesson Plan

Revised: 1/16/2017

NOTE: We review and update our lesson plans annually; latest versions can be found online at http://www.nps.gov/grca/learn/education/learning/ancient-life.htm

TEACHERS PLEASE NOTE: This activity will be led by the ranger during the distance learning program. Print the fossilization and ecosystem role cards and cut them apart so that each student has one from each set. Consider laminating the cards if you plan to participate in this program on a repeated basis. The extension activity can be done as a pre-program activity if you feel your kids would benefit from repeating the activity. If you do the pre-program activity, please inform the ranger at the start of your scheduled program time.

School Subject Science

Grade Level $3^{rd} – 5^{th}$

Lesson Overview:

Students will play a game to understand the fossilization process.

Lesson Objective:

Students will understand the fossilization process and why some things get fossilized and some things don't.

Materials:

- Fate cards
- Ecosystem role cards

Procedure:

1. The game will begin when the ranger asks the students: "Who wants to become a fossil?" In order to understand the fossilization process the students will need to imagine an ecosystem with all the different plants and animals that call that ecosystem home. The ranger will briefly discuss what an ecosystem is and then focus on a desert ecosystem. The students can use their imaginations to describe this setting in as much detail as they desire.

2. The ranger will then ask the teacher to hand out the ecosystem role cards. Each student can randomly pick a role card that will tell them which plant or animal they are within the desert ecosystem. The ranger and teacher will help students think of ways they could act out their animal or plant and how different roles might interact with each other. For instance, a plant might grow or sway in the breeze, carnivores might chase prey, herbivores might nibble on plants, etc.

3. Have the students act out their roles. Each can be given a turn to make vocalizations or gestures. Students can also interact with each other as they might in their natural environment.

4. At a time determined by the ranger, the ranger yells “freeze.” “Freeze” means that the time for possible fossilization begins and all students must stop in their tracks. The teacher then has each student pick a fate card. If you need more cards, simply make a double set. Be sure that there are many more “destruction” cards than “fossilization” cards to represent the small chance of something being fossilized in the real world. Students can then act out the role on their fate card.

5. Discuss the meaning of this exercise. Have each student discuss his or her role as an organism and what happened to this organism after it died. On the classroom board, make one list of the organisms that were fossilized and another list of those that were destroyed. Remind the students that the only animals and plants future paleontologist will know anything about are the ones that become fossils. Discuss whether your list of fossils is a good representation of the living community they just acted out. Ask the students how this might affect the science of paleontology.

Extension (can be done as a post-program activity)

Play the game again with a new *environment*, this time asking a few of the students to pretend to be a paleontologist and leave the room before the new environment is decided. After the rest of the students have acted out their parts and then received their fate cards, have the destroyed plants and animals leave the scene. The “paleontologists” can then enter the room and examine the “fossils.” The paleontologists should work as a team, taking notes of their findings and then trying to determine what the environment was. They can also make educated guesses as to what plants and animals are missing from the fossil record. The rest of the class can tell them the answers after the paleontologists are done with their study.